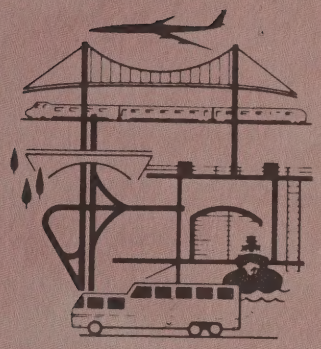
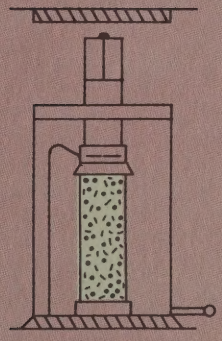
5021

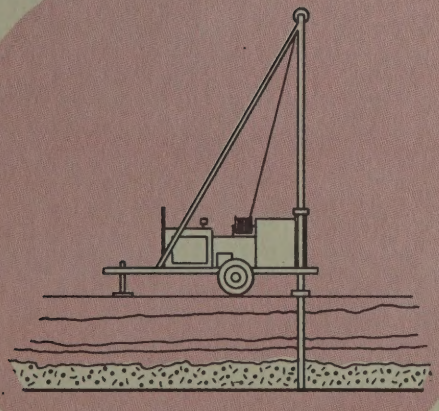
STATE OF NEW YORK
DEPARTMENT OF TRANSPORTATION

RAYMOND T. SCHULER, COMMISSIONER

SOIL MECHANICS BUREAU







OQUAGA STATE PARK
TEST WELLS
BROOME COUNTY
OGS PROJECT NO. M-0108
P.I.N. E101.09-701

MAY 1975

SM 238b (1/73)

NEW YORK STATE
DEPARTMENT OF TRANSPORTATION
Raymond T. Schuler, Commissioner

1220 Washington Avenue, State Campus, Albany, New York 12226

May 16, 1975

Mr. Harry Stevens, Jr., Director
Office of General Services
Public Bldgs. Design and
Construction Group, 34th Floor
Empire State Plaza Tower
Albany, New York

Attention: Mr. R. W. Wilson

Dear Mr. Stevens:

Project: Oquaga State Park
Test Wells
Broome County
OGS Proj. No. M-0108
PIN E10109.701

Subject: Transmittal of Test Well Results

In accordance with your request, this Bureau's Engineering Geology Section has completed an evaluation of four test wells progressed at the project site.

A copy of this review, contained in a memorandum from Mr. R. Brito to Mr. B. Butler, both of this Bureau, is attached.

We will be pleased to provide further assistance or review of this project, if desired.

Very truly yours,

Lyndon H. Moore, Director
Soil Mechanics Bureau

By

Bernard E. Butler
Bernard E. Butler
Associate Soils Engineer

NYSDOT
Library
50 Wolf Road, POD 34
Albany, New York 12232

BEB:WRB:MVM
Attachment

cc: Mr. M. D. Graham
Mr. J. K. Connors (2)

MEMORANDUM
DEPARTMENT OF TRANSPORTATION

DATE April 28, 1975

SUBJECT M-0108
TEST WELLS - OQUAGA CREEK STATE PARK, BROOME COUNTY

FROM R. Brito, Junior Engineering Geologist

TO B. Butler, Associate Soils Engineer

The Office of General Services requested the assistance of an Engineering Geologist to provide geologic interpretation and evaluation to Messrs. Edward Mosher, Engineer In Charge and Charles Simons, Inspector in the construction of four six inch test wells at the subject project. All of the wells were drilled ten inch oversized through overburden and ten feet into rock to facilitate grouting.

Construction of Well No. 3 commenced on November 15, 1974 and by November 17 drilling had progressed to a depth of 60 feet. Due to poor weather conditions, construction on Well No. 3 was temporarily terminated. Construction of this well resumed on December 17, 1974 and progressed to bed rock, which was encountered at a depth of 129 feet. The overburden consisted of brown till from two to 129 feet with no water present. At the interface between overburden and bed rock there was approximately two gallons per minute. Messrs. Mosher, Simon and the writer agreed to proceed into rock in an attempt to obtain the required amount of water (25 gpm) from this well. The drillers were instructed to drill ten feet into rock to a depth of 140 feet and grout the six inch casing from 130 to 140 feet. The bedrock consisted of dark gray layers of sandy shale. Small amounts of water were encountered the entire length of the well to a depth of 320 feet. A yield test was made and the yield was 24 gpm, with the air pipe at the 320 foot level. The yield was increased to 29 gpm after two hours of development with air from the rotary drilling rig. The well was disinfected and a tamper-proof cap was placed pending a pump test.

Construction of Well No. 4 began on January 8, 1975 and a depth of 122 feet was reached that day with no noticeable amounts of water encountered in the overburden. The overburden consisted of brown till from two to 122 feet, much the same as Well No. 3. At the interface between overburden and rock approximately five gpm was encountered; not enough water to satisfy well specifications. It was decided to proceed into rock to obtain the required amount of water. The six inch casing was grouted ten feet into rock to a depth of 135 feet. The bedrock consisted of layers of dark gray sandy shale to a depth of 200 feet. Most of the water was encountered at a zone between the 185-200 foot level, with a yield of 40 gpm. After developing Well No. 4 with air for two hours and increasing the yield to 45 gpm the well was disinfected and a tamper-proof cap was installed until a pump test could be performed.

On January 21, 1975 construction of Well No. 2 commenced to a depth of 112 feet at which time bedrock was encountered. The overburden consisted of brown till from two to 112 feet which contained no water. Potential yield was estimated at four gpm at the interface between overburden and bedrock and it was decided

to progress the hole into bedrock. The casing was grouted ten feet into rock to a depth of 130 feet and the hole was advanced to a depth of 200 feet before any water was encountered (approximately one-half gpm). Varying amounts of water were encountered from 215 feet to 320 feet with the major source coming from a zone between the 260-320 foot level, approximately 20 gpm. The well was developed with air for seven hours with a final yield of 31.5 gpm, with the air pipe at the 320 foot level. The well was disinfected and a tamper-proof cap was installed, pending a pump test.

Construction of Well No. 1 commenced on January 30, 1975 and proceeded to a depth of 100 feet. The overburden consisted of a brown till two to 100 feet with some groundwater present at a zone between 10 and 15 feet. A water bearing gravel was encountered at a depth of approximately 100 feet and extended to a depth of 130 feet. The six inch drill hole was extended approximately three feet through the gravel bed and into bedrock for a seat. Samples of gravel collected every five feet, were taken to the Johnson Division, Universal Oil Products Co., Thorofare, New Jersey, for analysis. After setting a 20 foot long 80 slot size stainless steel screen (recommended by Johnson), the hole was developed with air for ten hours. The yield of this well was approximately 100 gpm with the air pipe at the 130 foot level. The annular space around the permanent casing was grouted from the ground surface to a depth of 26 feet. The well was disinfected, and a tamper-proof cap was installed until a pump test could be performed.

Special consideration should be given to pumping rates and recoveries of wells Nos. 1 and 2. When Well No. 1 was pumped, the head of Well No. 2 dropped 37 feet, and when Well No. 2 was pumped, the head of Well No. 1 dropped 12 feet. This drop in head shows that these two wells interfere. The most important factor to be considered is the rate at which these two wells recovered, approximately six days for total recovery. This recovery rate indicates to the writer that the aquafer might be of a limited nature. Consideration might be given to performing a yield test after the lake is filled as there is a possibility that the lake might provide additional recharge to these wells.

Diagrams and results of pump tests for all wells are attached. Samples of water were taken from each well at the conclusion of each pump test and submitted to the New York State Department of Health, Division of Laboratories and Research in Syracuse, New York for water quality analysis.

RB:MF

OQUAGA CREEK STATE PARK

PHASE II TEST WELL NUMBER 1

CONTINUOUS YIELD TEST

Static Level prior to test - 11.5 feet below original ground surface
Pump Intake during test - 109.0 feet below original ground surface

Date	Time	Rate (GPM)	Dynamic Level (Feet)	Drawdown (Feet)	Observation Well No. 2 Drawdown (Feet)	Remarks
2/18/75	11:45 am	105	11.5	0	0	yield manually increased
	11:50 am	112	43.0	31.5		
	12:00 noon	112	52.0	40.5		
	12:30 pm	112	62.0	50.5	3.9	
	1:30 pm	112	71.8	60.3		
	1:45 pm	107	74.3	62.8		yield not manually decreased
	2:00 pm	107	75.3	63.8	12.0	
	3:00 pm	107	82.0	70.5		
	3:20 pm	105	83.0	71.5		yield not manually decreased
	4:20 pm	105	85.0	73.5		
	5:20 pm	105	87.0	75.5	16.5	
	6:20 pm	101	89.5	78.0		yield not manually decreased
	7:20 pm	100	92.0	80.5		not manually decreased
	8:00 pm	100	94.0	82.5		
	9:00 pm	97	96.0	84.5	24.0	yield not manually decreased
	10:00 pm	97	96.0	84.5		
	11:00 pm	97	99	87.5		

Date	Time	Rate (GPM)	Dynamic Level (Feet)	Drawdown (Feet)	Observation Well No. 2 Drawdown (Feet)	Remarks
2/19/75	12:00 midnight	95	99	87.5	27.4	yield not manually decreased
	1:00 am	92	102	90.5		yield not manually decreased
	2:00 am	89	105	93.5		yield not manually decreased
	3:00 am	89	105	93.5		
	4:00 am	89	105	93.5		
	5:00 am	88	106	94.5		yield not manually decreased
	6:00 am	88	106	94.5		
	7:00 am	87	106	94.5		yield not manually decreased
	8:00 am	87	106	94.5	34.0	
	9:00 am	86	106	94.5		yield not manually decreased
	9:30 am	75	96	84.5		yield decreased manually
	10:00 am	70	95.5	84.0		yield not manually decreased
	11:00 am	70	95.0	83.5	35.1	
	11:45 am	70	95.0	83.5		
	11:45 am		END PUMP TEST			

Pump Test Well No. 1 After Additional Development

Date	Time	Rate (GPM)	Dynamic Level (Feet)	Remarks
2/19/75	4:45 pm	108	95	
	5:14 pm	100	97	yield manually decreased
	5:35 pm	89	97	yield manually decreased
	6:00 pm	77	93.5	yield manually decreased
	6:25 pm	77	92.5	
	7:00 pm	77	92.5	
	8:00 pm	77	92.5	
	8:45 pm	77	92.5	
	8:45 pm		END PUMP TEST	

RECOVERY WELL NO. 1

Date	Time	Static Level (Feet)	Residual Head (Feet)	Remarks
2/19/75	8:47 pm	89.0	77.5	
	9:56 pm	59.0	47.5	
2/20/75	6:46 am	41.5	30.0	
	1:26 pm	35.0	23.5	
2/21/75	9:26 am	25.3	13.8	
	7:50 pm	17.5	6.0	
2/24/75	9:10 am	12.6	1.2	
2/25/75	11:00 am	11.5	0	

RECOVERY WELL NO. 2 AFTER PUMP TEST COMPLETED ON WELL NO. 1

Date	Time	Static Level (Feet)	Residual Drawdown (Feet)	Remarks
2/19/75	9:00 pm	70.0	35.0	
2/20/75	6:50 am	59.9	24.5	
2/21/75	9:30 am	49.9	14.9	
2/24/75	9:15 am	38.3	3.3	
2/25/75	11:15 am	36.0	1.0	

Note (1) Eratic pumping rate is due to the turbine pump supplied by the Contractor. The nature of this pump is to slowly decrease yield of its own accord.

Note (2) Well No. 1 was re-developed on the recommendation of the drillers. The method used was to raise the water level in the casing and let it fall back into the well, developing a push-pull action, causing additional fine particles to be drawn out of the water bearing gravel and through the screen into the well. It was thought this method might increase the yield of the well.

Note (3) Well No. 1 was pumped an additional four hours at a rate of 77 gpm.

OQUAGA CREEK PARK PHASE II TEST WELL NUMBER 2

STEP DRAWDOWN TEST

Static Level prior to pump test - 35.0 feet below ground surface
Pump Intake during test - 310 feet below ground surface

Date	Time	Rate (GPM)	Dynamic Level (Feet)	Drawdown (Feet)	Observation Well No. 1 Drawdown (Feet)	Remarks
2/12/75	2:15 pm	10	35.0	0		
	2:30 pm	10	45.0	10.0		
	2:45 pm	10	45.0	10.0		Stabilized drawdown
	2:45 pm	15	-	-		Increased yield
	3:00 pm	15	56.0	21.0		Stabilized drawdown
	3:00 pm	20	-	-		Increased yield
	9:00 pm	20	78.0	43.0		Stabilized drawdown
	9:00 pm	25	-	-		Increased yield
	10:00 pm	25	87.0	52.0	1.9	Stabilized drawdown
	10:00 pm	30	-	-	-	Increased yield
2/13/75	12:00 midnight	30	101.0	66.0	4.0	Stabilized drawdown
	12:00 midnight	35	-	-	-	Increased yield
	2:30 am	35	123	88		Stabilized drawdown
	2:30 am	40	-	-	-	Increased yield
	3:30 am	40	133	98		Stabilized drawdown
	3:30 am	45	-	-	-	Increase yield
	4:30 am	-	-	-	7.1	
	5:30 am	45	173	138	-	Stabilized yield
	5:30 am	50	-	-	-	Increase yield
	7:45 am	45	241	206		Yield not manually decreased
	2:15 pm	45	240	205	11.6	Stabilized drawdown
	2:15 pm		PUMP TEST ENDS			

OQUAGA CREEK PARK PHASE II TEST WELL NUMBER 3

STEP DRAWDOWN TEST

Static Level prior to test - Flowing over top of casing three feet above original ground surface

Pump Intake during test - 310.0 feet below original ground surface

Date	Time	Rate (GPM)	Dynamic Level (Feet)	Drawdown (Feet)	Remarks
1/15/75	11:45 am	10	-	0	
	12:30 pm	10	22.5	25.5	Stabilized drawdown
	12:30 pm	15	-	-	Increased yield
	12:45 pm	15	22.5	25.5	Stabilized drawdown
	12:45 pm	20	-	-	Increased yield
	1:30 pm	20	45.0	48.0	Stabilized drawdown
	1:30 pm	25	-	-	Increased yield
	2:30 pm	25	76.4	79.4	Stabilized drawdown
	2:30 pm	30	-	-	Increased yield
	3:30 pm	30	118.5	121.5	Stabilized drawdown
	3:30 pm	35	-	-	Increased yield
	4:15 pm	35	160.0	163.0	Stabilized drawdown
	4:15 pm	40	-	-	Increased yield
	5:30 pm	40	219.0	222.0	Drawdown not stabilized
	6:30 pm	30	-	-	Decreased yield
	8:30 pm	30	268.0	271.0	Stabilized drawdown
	8:30 pm	32	-	-	Increased yield
1/16/75	12 midnight	32	275	278	Drawdown not stabilized
1/16/75	12 noon	32	277	280	Drawdown stabilized
	12:00 noon		END PUMP TEST		

RECOVERY WELL NUMBER 3

Date	Time	Static Level (Feet)	Residual Drawdown (Feet)	Remarks
1/16/75	12:00 noon	277.0	280.0	
	12:15 pm	90.0	93.0	
	12:30 pm	7.0	10.0	
	1:00 pm	1.0	4.0	
	1:15 pm	Flowing over top of casing	0	

OQUAGA CREEK PARK PHASE II TEST WELL NUMBER 4

STEP DRAWDOWN TEST WELL NUMBER 4

Static Level prior to test - 4.0 feet below original ground surface
Pump Intake during test - 193 feet below original ground surface

Date	Time	Rate (GPM)	Dynamic Level (Feet)	Drawdown (Feet)	Remarks
1/16/75	6:00 pm	10	4.0	0	Pump test begins
	6:30 pm	10	4.5	.5	Stabilized drawdown
	6:30 pm	15	-	-	Increased yield
	7:00 pm	15	11.0	7.0	Stabilized drawdown
	7:00 pm	20	-	-	Increased yield
	7:45 pm	20	21.0	17.0	Stabilized Drawdown
	7:45 pm	25	-	-	Increased yield
	8:45 pm	25	29.0	25.0	Stabilized drawdown
	8:45 pm	30	-	-	Increased yield
	9:45 pm	30	36.0	32.0	Stabilized drawdown
	9:45 pm	35	-	-	Increased yield
	10:45 pm	35	41.0	37.0	Stabilized drawdown
	10:45 pm	40	-	-	Increased yield
	11:45 pm	40	56.0	52.0	Stabilized drawdown
	11:45 pm	45	-	-	Increased yield
1/17/75	12:45 am	45	76.0	72.0	Stabilized drawdown
	12:45 am	50	-	-	Increase yield
	1:45 am	50	81.0	77.0	Stabilized drawdown
	1:45 am	55	-	-	Increase yield
	2:45 am	55	105.0	101.0	Stabilized drawdown

Date	Time	Rate (GPM)	Dynamic Level (Feet)	Drawdown (Feet)	Remarks
	2:45 am	60	-	-	Increased yield
	3:15 pm	60	161.0	157.0	Drawdown not stabilized
	3:15 pm	50	-	-	Decreased yield
	6:00 pm	50	156.0	152.0	Stabilized yield
	6:00 pm		END PUMP TEST		

RECOVERY WELL NO. 4

Date	Time	Static Level (Feet)	Residual Drawdown (Feet)	Remarks
1/17/75	6:10 pm	76.0	72.0	
	6:30 pm	18.5	14.5	
	6:50 pm	16.7	12.7	
	7:10 pm	15.9	11.9	

No readings taken during the night, by next morning static level 4 feet below ground surface.

State of New York
Dept. of Transportation
Soil Mechanics Bureau
TEST WELL LOG

Region No. 9
County Broome
Proj. No. M-0108
Requesting Dept. O.G.S.
Project Test Wells Oquaga Creek State Park Phase II

Test Well No. 1
Gr. Elev. 1599±
Location N 796,300.00
E 204,852.00

Depth, ft.	Description
	Grout
	2-26 feet
25	
50	
	Glacial Till (Brown)
	2-100 feet
75	
100	
	Gravel, some sand
	(Water Bearing)
125	100-130 feet
	Bedrock (Shale) 130 feet
	Bottom of Drilled Well
150	133 Feet

Date Start 1/30/75
Date Finish 2/10/75
Contractor Raymond Randolph
Driller Paul Wehnau
EIC Edward Mosher
Inspector Charles Simons
Rig Type Air Rotary

Well Data
Hole Diam. 10 in. oversized
Final Depth 133 ft.
Casing Diam. 6 in.
Casing Length 113 ft.
Casing Above Ground 1 ft.
Screen Type 20 ft. 80 slot Johnson S.S.
Screen Setting from 113 ft. to 131 ft.
Gravel Pack None
Grout from ground surface to 26 ft.

Development 10 hrs. with air in the water bearing gravel

Test Data
Static Depth to Water 11.5 ft.
Pump Setting 109 ft.
Pumping Rate 70 gpm
Date and Duration 2/18/75 24 hrs.
Specific Capacity .73 gpm per foot

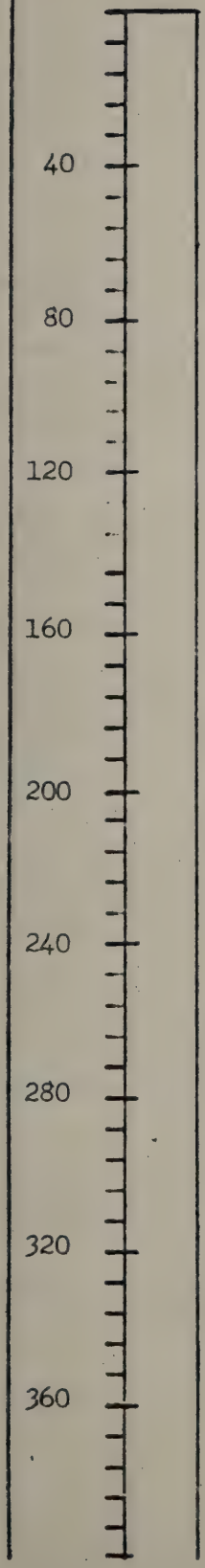
Recommendations
Pump Setting 108 ft.
Pumping Rate 77 gpm

Remarks

State of New York
Dept. of Transportation
Soil Mechanics Bureau
TEST WELL LOG

Region No. 9
County Broome
Proj. No. M-0108
Requesting Dept. O.G.S.
Project Test Wells Oquaga Creek State Park Phase II

Test Well No. 2
Gr. Elev. 1623±
Location N 796,322



Description

Date Start 1/21/75
Date Finish 1/29/75
Contractor Raymond Randolph
Driller Paul Wehnau
EIC Edward Mosher
Inspector Charles Simons
Rig Type Air

Well Data

Hole Diam. 10 in. oversized
Final Depth 320 ft.
Casing Diam. 6 in.
Casing Length 132 ft.
Casing Above Ground 2 ft.
Screen Type None
Screen Setting --
Gravel Pack None
Grout from 120 ft. to 130 ft.

Development 7 hrs. with air in the water bearing bedrock.

Test Data

Static Depth to Water 35 ft.
Pump Setting 310 ft.
Pumping Rate 45 g.p.m.
Date and Duration 2/12/75 24 hrs.
Specific Capacity .21 gpm per foot

Recommendations

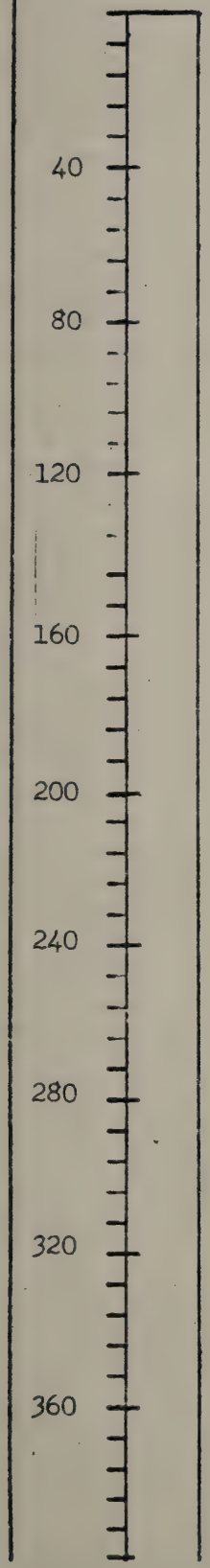
Pump Setting 310 ft.
Pumping Rate 45 g.p.m.

Remarks

State of New York
Dept. of Transportation
Soil Mechanics Bureau
TEST WELL LOG

Region No. 9
County Broome
Proj. No. M-0108
Requesting Dept.
Project Test wells Oquaga Creek State Park

Test Well No. 3
Gr. Elev. 1637±
Location N 798,340



Description

Glacial Till

(brown)

2-129 feet

Grout 130-140 feet

Bedrock

(dark gray sandy shale)

129-320 feet

Bottom of Drilled Well

320 feet

Date Start 11/15/74
Date Finish 1/7/75
Contractor Raymond Randolph
Driller Paul Wehnau
EIC Edward Mosher
Inspector Charles Simons
Rig Type Air Rotary

Well Data

Hole Diam. 10 in. oversized
Final Depth 320 ft.
Casing Diam. 6 in.
Casing Length 142 ft.
Casing Above Ground 2 ft.
Screen Type None
Screen Setting --
Gravel Pack None
Grout from 130 ft. to 140 ft.

Development 2 hrs. using compressed air from rotary drilling rig within the water bearing bedrock

Test Data

Static Depth to Water Flowing over casing
Pump Setting 310 ft.
Pumping Rate 32 gpm
Date and Duration 1/15/75 24 hrs.
Specific Capacity .11 gpm per foot

Recommendations

Pump Setting 310 ft.
Pumping Rate 32 gpm

Remarks

State of New York
Dept. of Transportation
Soil Mechanics Bureau
TEST WELL LOG

Region No. 9
County Broome
Proj. No. M-0108
Requesting Dept. O.G.S.
Project Test Wells Oquaga Creek State Park Phase II

Test Well No. 4
Gr. Elev. 1646+
Location N 793,357
E 206,266

Depth, ft.	Description
25	
	Glacial Till
	(brown)
50	2-122 Feet
100	
125	Rotten Rock 122-125 feet
	Grout 125-135 feet
150	Bedrock
	(gray sandy shale)
175	122-200 feet
200	Bottom of Drilled Well
	200 feet
225	

Date Start 1/8/75
Date Finish 1/14/75
Contractor Raymond Randolph
Driller Paul Wehnau
EIC Edward Mosher
Inspector Charles Simon
Rig Type Rotary

Well Data

Hole Diam. 10 in. oversized
Final Depth 200 ft.
Casing Diam. 6 in.
Casing Length 137 ft.
Casing Above Ground 2 ft.
Screen Type None
Screen Setting --
Gravel Pack None
Grout from 125 ft. to 135 ft.

Development 2 hrs. with air in the water bearing bedrock.

Test Data

Static Depth to Water 4 ft.
Pump Setting 193 ft.
Pumping Rate 50 g.p.m.
Date and Duration 1/16/75 .24 hrs.
Specific Capacity .32 per foot

Recommendations

Pump Setting 190 ft.
Pumping Rate 50 gpm

Remarks

NEW YORK STATE DEPARTMENT OF HEALTH
DIVISION OF LABORATORIES AND RESEARCH
ENVIRONMENTAL HEALTH CENTER

RESULTS OF EXAMINATION
(PAGE 1 OF 1)

LAB ACCESSION NO: 04564 YR/MO/DAY/HR SAMPLE REC'D: 75/02/20/13

REPORTING LAB: 30 SYRACUSE LAB
PROGRAM: 120 RESIDENTIAL AND RECREATIONAL SANITATION
STATION (SOURCE) NO:
DRAINAGE BASIN: 06 NY GAZETTEER NO: 0361 COUNTY: BROOME
COORDINATES: DEG ' "N, DEG ' "W
COMMON NAME INCL SURVEYED: OQUAGA STATE PARK ARTIC ROAD

EXACT SAMPLING POINT: WELL 1 WELL SAMPLE
TYPE OF SAMPLE: 12 WATER, DRILLED WELL
MO/DAY/HR OF SAMPLING: FROM 00/00 TO 02/19/12
REPORT SENT TO: CO (0) RO (0) LPHE (2) LHO (0) FED (0) CHEM (0)

	PARAMETER	UNIT	RESULT	NOTATION
026800	STANDARD PLATE COUNT 48 HR		7.	
027000	COLIFORM BACT MF COL/100ML		1.	LT

SATISFACTORY AT THE TIME OF SAMPLING
BROOME CO. HEALTH DEPT.

RECEIVED
FEB 27 1975
BROOME COUNTY
HEALTH DEPT.

DATE COMPLETED: 2/24/75

DIRECTOR OF ENVIRONMENTAL SANITATION
BROOME COUNTY HEALTH DEPT
60 WATER STREET
BINGHAMTON, N.Y. 13901

SUBMITTED BY: EAM

NEW YORK STATE DEPARTMENT OF HEALTH
DIVISION OF LABORATORIES AND RESEARCH
ENVIRONMENTAL HEALTH CENTER

RESULTS OF EXAMINATION
(PAGE 1 OF 2)

LAB ACCESSION NO: 02227 YR/MO/DAY/HR SAMPLE REC'D: 75/02/20/13

REPORTING LAB: 33 SYRACUSE LAB
PROGRAM: 120 RESIDENTIAL AND RECREATIONAL SANITATION
STATION (SOURCE) NO:
DRAINAGE BASIN: 06 NY GAZETTEER NO: 0361 COUNTY: BROOME
COORDINATES: DEG ' "N, DEG ' "W
COMMON NAME INCL SURW'SHED: OQUAGA ST.PK ARTIC RD

EXACT SAMPLING POINT: WELL NO1 WELLSAMPLE
TYPE OF SAMPLE: 12 WATER, DRILLED WELL
MO/DAY/HR OF SAMPLING: FROM 00/00 TO 02/19/12
REPORT SENT TO: CO (1) RO (0) LPHC (2) LHO (1) FED (0) CHEM (0)

PARAMETER		UNIT	RESULT	NOTATION
000100	COLOR (APPARENT)		15.	
000200	TURBIDITY, J.T.U.		18.	
000300	ODOR, HOT		1.0044	
000501	NITROGEN,AMMONIA AS N	MG/L	0.02	LT
000709	NITROGEN,NITRITE AS N	MCG/L	1.	
000801	NITROGEN,NITRATE AS N	MG/L	0.1	LT
001001	CHLORIDES	MG/L	2.2	
001101	HARDNESS, TOTAL AS CACO3	MG/L	160.	
001501	ALKALINITY, MTH OR AS CACO3	MG/L	143.	
001900	PH (LABORATORY)		7.8	
006401	NITROGEN,KJELDAHL,INCL. AMM	MG/L	0.04	LT
006501	CHEMICAL OXYGEN DEMAND	MG/L	4.	LT
010001	IRON	MG/L	1.9	

DATE COMPLETED: 2/26/75

TO: LOCAL HEALTH OFFICER SUBMITTED BY: MOSHER

NEW YORK STATE DEPARTMENT OF HEALTH
DIVISION OF LABORATORIES AND RESEARCH
ENVIRONMENTAL HEALTH CENTER

RESULTS OF EXAMINATION
(PAGE 2 OF 2)

LAB ACCESSION NO: 02227 YR/MO/DAY/HR SAMPLE REC'D: 75/02/20/13

REPORTING LAB: 33 SYRACUSE LAB
PROGRAM: 120 RESIDENTIAL AND RECREATIONAL SANITATION
STATION (SOURCE) NO:
DRAINAGE BASIN: 06 NY GAZETTEER NO: 0361 COUNTY: BROOME
COORDINATES: DEG ' "N, DEG ' "W
COMMON NAME INCL SURW'SHED: OQUAGA ST.PK ARTIC RD

EXACT SAMPLING POINT: WELL NO1 WELLSAMPLE
TYPE OF SAMPLE: 12 WATER, DRILLED WELL
MO/DAY/HR OF SAMPLING: FROM 00/00 TO 02/19/12
REPORT SENT TO: CO (1) RO (0) LPHE (2) LHO (1) FED (0) CHEM (0)

	PARAMETER	UNIT	RESULT	NOTATION
010201	MANGANESE	MG/L	0.02	LT
010701	SODIUM	MG/L	50.	
100300	ODOR, COLD		1.004:	

DATE COMPLETED: 2/26/75

TO: LOCAL HEALTH OFFICER SUBMITTED BY: MOSHER

NEW YORK STATE DEPARTMENT OF HEALTH
DIVISION OF LABORATORIES AND RESEARCH
ENVIRONMENTAL HEALTH CENTER

RESULTS OF EXAMINATION
(PAGE 1 OF 1)

LAB ACCESSION NO: 03964 YR/MO/DAY/HR SAMPLE REC'D: 75/02/13/16

REPORTING LAB: 30 SYRACUSE LAB
PROGRAM: 120 RESIDENTIAL AND RECREATIONAL SANITATION
STATION (SOURCE) NO:
DRAINAGE BASIN: 06 NY GAZETTEER NO: 0361 COUNTY: BROOME
COORDINATES: DEG ' "N. DEG ' "W
COMMON NAME INCL SUBW'SHED: OQUAGA STATE PK ARTIC RD

EXACT SAMPLING POINT: WELL NO2 WELLSAMPLE
TYPE OF SAMPLE: 12 WATER, DRILLED WELL
MO/DAY/HR OF SAMPLING: FROM 00/00 TO 02/13/14
REPORT SENT TO: CO (0) RO (0) LPHE (2) LHO (0) FED (0) CHEM (0)

	PARAMETER	UNIT	RESULT	NOTATION
026800	STANDARD PLATE COUNT 48 HR		3.	
027000	COLIFORM BACT MF COL/100ML		1.	LT

SATISFACTORY AT THE
TIME OF SAMPLING
BROOME CO. HEALTH DEPT.

RECEIVED
FEB 23 1975
BROOME COUNTY
HEALTH DEPT.

DATE COMPLETED: 2/18/75

DIRECTOR OF ENVIRONMENTAL SANITATION
BROOME COUNTY HEALTH DEPT
68 WATER STREET
BINGHAMTON, N.Y. 13901

SUBMITTED BY: EAM

NEW YORK STATE DEPARTMENT OF HEALTH
DIVISION OF LABORATORIES AND RESEARCH
ENVIRONMENTAL HEALTH CENTER

RESULTS OF EXAMINATION
(PAGE 1 OF 2)

LAB ACCESSION NO: 01911 YR/MO/DAY/HR SAMPLE REC'D: 75/02/14/08

REPORTING LAB: 33 SYRACUSE LAB
PROGRAM: 120 RESIDENTIAL AND RECREATIONAL SANITATION
STATION (SOURCE) NO:
DRAINAGE BASIN: 06 NY GAZETTEER NO: 0361 COUNTY: BROOME
COORDINATES: DEG ' "N. DEG ' "W
COMMON NAME INCL SUBW'SHED: OQUAGA STATE PARK, ARTIC RD.

EXACT SAMPLING POINT: WELL #2-WELL SAMPLE
TYPE OF SAMPLE: 12 WATER, DRILLED WELL
MO/DAY/HR OF SAMPLING: FROM 00/00 TO 02/13/14
REPORT SENT TO: CO (1) RO (0) LPHE (2) LHO (0) FED (0) CHEM (0)

	PARAMETER	UNIT	RESULT	NOTATION
000100	COLOR (APPARENT)		1.	
000200	TURBIDITY, J.T.U.		0.5	LT
000300	ODOR, HOT		1.0044	
000501	NITROGEN,AMMONIA AS N	MG/L	0.07	
000709	NITROGEN,NITRITE AS N	MCG/L	2.	
000801	NITROGEN,NITRATE AS N	MG/L	0.1	LT
001001	CHLORIDES	MG/L	8.5	
001101	HARDNESS, TOTAL AS CACO3	MG/L	108.	
001501	ALKALINITY, MTH OR AS CACO3	MG/L	136.	
001900	PH (LABORATORY)		8.1	
006401	NITROGEN,KJELDAHL,INCL. AMM	MG/L	0.07	
006501	CHEMICAL OXYGEN DEMAND	MG/L	4.	LT
010001	IRON	MG/L	0.02	LT

DATE COMPLETED: 2/21/75

SATISFACTORY AT THE
TIME OF SAMPLING
BROOME CO. HEALTH DEPT.

DIRECTOR OF ENVIRONMENTAL SANITATION
BROOME COUNTY HEALTH DEPT
68 WATER STREET
BINGHAMTON, N.Y. 13901

SUBMITTED BY: MOSHER

NEW YORK STATE DEPARTMENT OF HEALTH
DIVISION OF LABORATORIES AND RESEARCH
ENVIRONMENTAL HEALTH CENTER

RESULTS OF EXAMINATION
(PAGE 2 OF 2)

LAB ACCESSION NO: 01911 YR/MO/DAY/HR SAMPLE REC'D: 75/02/14/08

REPORTING LAB: 33 SYRACUSE LAB
PROGRAM: 120 RESIDENTIAL AND RECREATIONAL SANITATION
STATION (SOURCE) NO:
DRAINAGE BASIN: 06 NY GAZETTEER NO: 0361 COUNTY: BROOME
COORDINATES: DEG ' "N, DEG ' "W
COMMON NAME INCL SUBW'SHED: OQUAGA STATE PARK, ARTIC RD.

EXACT SAMPLING POINT: WELL #2-WELL SAMPLE
TYPE OF SAMPLE: 12 WATER, DRILLED WELL
MO/DAY/HR OF SAMPLING: FROM 00/00 TO 02/13/14
REPORT SENT TO: CO (1) RO (0) LPHE (2) LHO (0) FED (0) CHEM (0)

	PARAMETER	UNIT	RESULT	NOTATION
010201	MANGANESE	MG/L	0.06	
010701	SODIUM	MG/L	44.	
100300	ODOR, COLD		1.0044	

SATISFACTORY AT THE
TIME OF SAMPLING
BROOME CO. HEALTH DEPT.

RECEIVED
FEB 26 1975
BROOME COUNTY
HEALTH DEPT.

SATISFACTORY AT THE
TIME OF SAMPLING
BROOME CO. HEALTH DEPT.

DATE COMPLETED: 2/21/75

DIRECTOR OF ENVIRONMENTAL SANITATION
BROOME COUNTY HEALTH DEPT
68 WATER STREET
BINGHAMTON, N.Y. 13901

SUBMITTED BY: MOSHER

NEW YORK STATE DEPARTMENT OF HEALTH
DIVISION OF LABORATORIES AND RESEARCH
ENVIRONMENTAL HEALTH CENTER

RESULTS OF EXAMINATION
(PAGE 1 OF 1).

LAB ACCESSION NO: 03537 YR/MO/DAY/HR SAMPLE REC'D: 75/02/07/13

REPORTING LAB: 30 SYRACUSE LAB
PROGRAM: 120 RESIDENTIAL AND RECREATIONAL SANITATION
STATION (SOURCE) NO:
DRAINAGE BASIN: 06 NY GAZETTEER NO: 0361 COUNTY: BROOME
COORDINATES: DEG ' "N, DEG ' "W
COMMON NAME INCL SUBWSHED: AQUAGA STATE PARK ARTIC RD

EXACT SAMPLING POINT: WELL NO 3 WELL SAMPLE
TYPE OF SAMPLE: 12 WATER, DRILLED WELL
MO/DAY/HR OF SAMPLING: FROM 00/00 TO 02/06/14
REPORT SENT TO: CO (0) RO (0) LPHE (2) LHO (0) FED (0) CHEM (0)

	PARAMETER	UNIT	RESULT	NOTATION
026800	STANDARD PLATE COUNT 48 HR		1.	LT
027000	COLIFORM BACT MF COL/100ML		1.	LT

SATISFACTORY AT THE
TIME OF SAMPLING
BROOME CO. HEALTH DEPT.

J-D

DATE COMPLETED: 2/10/75

DIRECTOR OF ENVIRONMENTAL SANITATION
BROOME COUNTY HEALTH DEPT
6A WATER STREET
BINGHAMTON, N.Y. 13901

SUBMITTED BY: MOSHER

NEW YORK STATE DEPARTMENT OF HEALTH
DIVISION OF LABORATORIES AND RESEARCH
ENVIRONMENTAL HEALTH CENTER

RESULTS OF EXAMINATION
(PAGE 1 OF 2)

LAB ACCESSION NO: 01693 YR/MO/DAY/HR SAMPLE REC'D: 75/02/07/13

REPORTING LAB: 33 SYRACUSE LAB
PROGRAM: 120 RESIDENTIAL AND RECREATIONAL SANITATION
STATION (SOURCE) NO:
DRAINAGE BASIN: 06 NY GAZETTEER NO: 0361 COUNTY: BROOME
COORDINATES: DEG ' "N, DEG ' "W
COMMON NAME INCL SURW'SHED: OQUAGE STATE PK ARTIC RD

EXACT SAMPLING POINT: WELL NO3 WELLSAMPLE
TYPE OF SAMPLE: 12 WATER, DRILLED WELL
MO/DAY/HR OF SAMPLING: FROM 00/00 TO 02/06/14
REPORT SENT TO: CO (1) RO (0) LPHE (2) LHO (0) FED (0) CHEM (0)

PARAMETER		UNIT	RESULT	NOTATION
000100	COLOR (APPARENT)		1.	
000200	TURBIDITY, J.T.U.		0.5	LT
000300	ODOR, HOT		1.0044	
000501	NITROGEN,AMMONIA AS N	MG/L	0.08	
000709	NITROGEN,NITRITE AS N	MCG/L	1.	
000801	NITROGEN,NITRATE AS N	MG/L	0.1	LT
001001	CHLORIDES	MG/L	23.	
001101	HARDNESS, TOTAL AS CACO3	MG/L	150.	
001501	ALKALINITY, MTH OR AS CACO3	MG/L	144.	
001900	PH (LABORATORY)		8.2	
006401	NITROGEN,KJELDAHL,INCL. AMM	MG/L	0.08	
006501	CHEMICAL OXYGEN DEMAND	MG/L	4.	LT
010001	IRON	MG/L	0.03	

DATE COMPLETED: 2/24/75

DIRECTOR OF ENVIRONMENTAL SANITATION
BROOME COUNTY HEALTH DEPT
60 WATER STREET
BINGHAMTON, N.Y. 13901

SUBMITTED BY: EAM

NEW YORK STATE DEPARTMENT OF HEALTH
DIVISION OF LABORATORIES AND RESEARCH
ENVIRONMENTAL HEALTH CENTER

RESULTS OF EXAMINATION
(PAGE 2 OF 2)

LAB ACCESSION NO: 01693 YR/MO/DAY/HR SAMPLE REC'D: 75/02/07/13

REPORTING LAB: 33 SYRACUSE LAB
PROGRAM: 120 RESIDENTIAL AND RECREATIONAL SANITATION
STATION (SOURCE) NO:
DRAINAGE BASIN: 06 NY GAZETTEER NO: 0361 COUNTY: BROOME
COORDINATES: DEG ' "N, DEG ' "W
COMMON NAME INCL SUBW'SHED: OQUAGE STATE PK ARTIC RD

EXACT SAMPLING POINT: WELL NO3 WELLSAMPLE
TYPE OF SAMPLE: 12 WATER, DRILLED WELL
MO/DAY/HR OF SAMPLING: FROM 00/00 TO 02/06/14
REPORT SENT TO: CO (1) RO (0) LPHE (2) LHO (0) FED (0) CHEM (0)

PARAMETER		UNIT	RESULT	NOTATION
010201	MANGANESE	MG/L	0.13	
010701	SODIUM	MG/L	60.	
100300	ODOR, COLD		1.0044	

SATISFACTORY AT THE
TIME OF SAMPLING
BROOME CO. HEALTH DEPT.

SATISFACTORY AT THE
TIME OF SAMPLING
BROOME CO. HEALTH DEPT.

DATE COMPLETED: 2/24/75

DIRECTOR OF ENVIRONMENTAL SANITATION
BROOME COUNTY HEALTH DEPT
60 WATER STREET
BINGHAMTON, N.Y. 13901

SUBMITTED BY: EAM

NEW YORK STATE DEPARTMENT OF HEALTH
DIVISION OF LABORATORIES AND RESEARCH
ENVIRONMENTAL HEALTH CENTER

RESULTS OF EXAMINATION
(PAGE 1 OF 1)

LAB ACCESSION NO: 03536 YR/MO/DAY/HR SAMPLE REC'D: 75/02/07/13

REPORTING LAB: 30 SYRACUSE LAB
PROGRAM: 120 RESIDENTIAL AND RECREATIONAL SANITATION
STATION (SOURCE) NO:
DRAINAGE BASIN: 06 NY GAZETTEER NO: 0361 COUNTY: BROOME
COORDINATES: DEG ' "N, DEG ' "W
COMMON NAME INCL SURW'SHED: OQUAGA STATE PARK ARTIC RD

EXACT SAMPLING POINT: WELL NO 4 WELL SAMPLE
TYPE OF SAMPLE: 12 WATER, DRILLED WELL
MO/DAY/HR OF SAMPLING: FROM 00/00 TO 02/06/14
REPORT SENT TO: CO (0) RO (0) LPHE (2) LHO (0) FED (0) CHEM (0)

PARAMETER		UNIT	RESULT	NOTATION
026800	STANDARD PLATE COUNT 48 HR		1.	
027000	COLIFORM BACT MF COL/100ML		1.	LT

SATISFACTORY AT THE
TIME OF SAMPLING
BROOME CO. HEALTH DEPT.

J-D

DATE COMPLETED: 2/10/75

DIRECTOR OF ENVIRONMENTAL SANITATION
BROOME COUNTY HEALTH DEPT
60 WATER STREET
BINGHAMTON, N.Y. 13901

SUBMITTED BY: MOSHER

NEW YORK STATE DEPARTMENT OF HEALTH
DIVISION OF LABORATORIES AND RESEARCH
ENVIRONMENTAL HEALTH CENTER

RESULTS OF EXAMINATION
(PAGE 1 OF 2)

LAB ACCESSION NO: 00690 YR/MO/DAY/HR SAMPLE REC'D: 75/01/20/08

REPORTING LAB: 33 SYRACUSE LAB
PROGRAM: 120 RESIDENTIAL AND RECREATIONAL SANITATION
STATION (SOURCE) NO:
DRAINAGE BASIN: 06 NY GAZETTEER NO: 0361 COUNTY: BROOME
COORDINATES: DEG ' "N, DEG ' "W
COMMON NAME INCL SUBW'SHED: OQUAGA STATE PARK

EXACT SAMPLING POINT: WELL 4 WELL SAMPLE
TYPE OF SAMPLE: 12 WATER, DRILLED WELL
MO/DAY/HR OF SAMPLING: FROM 00/00 TO 01/17/14
REPORT SENT TO: CO (1) RO (0) LPHE (2) LHO (0) FED (0) CHEM (0)

BROOME COUNTY HEALTH DEPT.
JAN 28 1975
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PARAMETER		UNIT	RESULT	NOTATION
000100	COLOR (APPARENT)		1.	
000200	TURBIDITY, J.T.U.		0.5	LT
000300	ODOR, HOT		1.0044	
000501	NITROGEN,AMMONIA AS N	MG/L	0.05	
000709	NITROGEN,NITRITE AS N	MCG/L	4.	
000801	NITROGEN,NITRATE AS N	MG/L	0.1	LT
001001	CHLORIDES	MG/L	12.	
001101	HARDNESS, TOTAL AS CACO3	MG/L	160.	
001501	ALKALINITY, MTH OR AS CACO3	MG/L	150.	
001900	PH (LABORATORY)		8.1	
006401	NITROGEN,KJELDAHL,INCL. AMM	MG/L	0.05	
008501	CHEMICAL OXYGEN DEMAND	MG/L	4.	LT
010001	IRON	MG/L	0.06	

DATE COMPLETED: 1/24/75

DIRECTOR OF ENVIRONMENTAL SANITATION
BROOME COUNTY HEALTH DEPT
60 WATER STREET
BINGHAMTON, N.Y. 13901

SUBMITTED BY: MUSHER

NEW YORK STATE DEPARTMENT OF HEALTH
DIVISION OF LABORATORIES AND RESEARCH
ENVIRONMENTAL HEALTH CENTER

RESULTS OF EXAMINATION
(PAGE 2 OF 2)

LAB ACCESSION NO: 00690 YR/MO/DAY/HR SAMPLE REC'D: 75/01/20/08

REPORTING LAB: 33 SYRACUSE LAB
PROGRAM: 120 RESIDENTIAL AND RECREATIONAL SANITATION
STATION (SOURCE) NO:
DRAINAGE BASIN: 06 NY GAZETTEER NO: 0361 COUNTY: BROOME
COORDINATES: DEG ' "N, DEG ' "W
COMMON NAME INCL SUBW'SHED: OQUAGA STATE PARK

EXACT SAMPLING POINT: WELL 4 WELL SAMPLE
TYPE OF SAMPLE: 12 WATER, DRILLED WELL
MO/DAY/HR OF SAMPLING: FROM 00/00 TO 01/17/14
REPORT SENT TO: CO (1) RO (0) LPHE (2) LHO (0) FED (0) CHEM (0)

PARAMETER		UNIT	RESULT	NOTATION
01C201	MANGANESE	MG/L	0.19	
01C701	SODIUM	MG/L	50.	
100300	ODOR, COLD		1.0044	

DATE COMPLETED: 1/24/75

DIRECTOR OF ENVIRONMENTAL SANITATION
BROOME COUNTY HEALTH DEPT
60 WATER STREET
BINGHAMTON, N.Y. 13901

SUBMITTED BY: MUSHER

01040
LRI